

Appl. No. 10/796,540
Amdt. Dated July 28, 2006
Reply to Office action of April 10, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled) An apparatus comprising:
a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements attached to a first device, the second portion being folded on the first device and having second contact elements attached to a second device; and
a stiffener attached to the upper surface of the third portion and located between the upper surface of the third portion and the first portion.
2. (currently amended) The apparatus of claim [[1]] 5 further comprising:
an encapsulant to encapsulate the flexible circuit and the first and second devices.
3. (currently amended) The apparatus of claim [[1]] 5 wherein the third portion has a lower surface having third contact elements.
4. (original) The apparatus of claim 3 wherein the lower surface is attached to at least one of a printed circuit board and a third device via the third contact elements.
5. (currently amended) ~~The~~ An apparatus ~~of claim 1~~ comprising:
a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements attached to a first device, the second portion being folded on the first device and having second contact elements attached to a second device, wherein at least one of the first and second contact elements comprise a plurality of solder pads; and
a stiffener attached to the upper surface of the third portion and located between the upper surface of the third portion and the first portion.

Appl. No. 10/796,540
Amdt. Dated July 28, 2006
Reply to Office action of April 10, 2006

6. (currently amended) The apparatus of claim ~~[[2]]~~ 5 wherein the third contact elements comprise a plurality of solder pads.

7. (original) The apparatus of claim 4 wherein the first, second, and third portions include first, second, and third layer having signal traces mapped to the first, second, and third contact elements, respectively.

8. (currently amended) The apparatus of claim ~~[[1]]~~ 5 wherein the first and second devices are identical devices having solder balls attached to the first and second contact elements, respectively.

9. (original) The apparatus of claim 8 wherein the identical devices are memory devices.

10. (currently amended) The apparatus of claim ~~[[1]]~~ 3 wherein the stiffener is made of one of an insulating material, a polyimide film, a mica plate, a polyester film, and a polyaramid paper.

11. (cancelled) A method comprises:

folding a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements attached to a first device, the second portion being folded on the first device and having second contact elements attached to a second device; and

attaching a stiffener to the upper surface of the third portion and between the upper surface of the third portion and the first portion.

12. (currently amended) The method of claim ~~[[11]]~~ 15 further comprising:
encapsulating the flexible circuit and the first and second devices by an encapsulant.

Appl. No. 10/796,540
Amdt. Dated July 28, 2006
Reply to Office action of April 10, 2006

13. (currently amended) The method of claim ~~[[11]]~~ 15 wherein the third portion has a lower surface having third contact elements.

14. (original) The method of claim 13 further comprising attaching the lower surface to at least one of a printed circuit board and a third device via the third contact elements.

15. (currently amended) ~~The A method of claim ~~14~~ comprising:~~
folding a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements attached to a first device, the second portion being folded on the first device and having second contact elements attached to a second device, wherein at least one of the first and second contact elements comprise a plurality of solder pads; and
attaching a stiffener to the upper surface of the third portion and between the upper surface of the third portion and the first portion.

16. (original) The method of claim ~~[[12]]~~ 13 wherein the third contact elements comprise a plurality of solder pads.

17. (original) The method of claim 14 wherein the first, second, and third portions include first, second, and third layer having signal traces mapped to the first, second, and third contact elements, respectively.

18. (currently amended) The method of claim ~~[[11]]~~ 15 wherein the first and second devices are identical devices having solder balls attached to the first and second contact elements, respectively.

19. (original) The method of claim 18 wherein the identical devices are memory devices.

Appl. No. 10/796,540
Amdt. Dated July 28, 2006
Reply to Office action of April 10, 2006

20. (currently amended) The method of claim ~~[[1]]~~ 15 wherein the stiffener is made of one of an insulating material, a polyimide film, a mica plate, a polyester film, and a polyaramid paper.

21. (cancelled) A module comprising:
a first device and a second device; and
a stacking element to stack the second device on the first device, the stacking element comprising:
a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements attached to the first device, the second portion being folded on the first device and having second contact elements attached to the second device, and
a stiffener attached to the upper surface of the third portion and located between the upper surface of the third portion and the first portion.

22. (currently amended) The module of claim ~~[[21]]~~ 25 wherein the stacking element further comprising:
an encapsulant to encapsulate the flexible circuit and the first and second devices.

23. (currently amended) The module of claim ~~[[21]]~~ 25 wherein the third portion has a lower surface having third contact elements.

24. (original) The module of claim 23 wherein the lower surface is attached to at least one of a printed circuit board and a third device via the third contact elements.

25. (currently amended) ~~The A module of claim 24 comprising:~~
a first device and a second device; and
a stacking element to stack the second device on the first device, the stacking element comprising:
a flexible circuit having first, second, and third portions, the first portion being folded on an upper surface of the third portion and having first contact elements

Appl. No. 10/796,540
Amdt. Dated July 28, 2006
Reply to Office action of April 10, 2006

attached to the first device, the second portion being folded on the first device and having second contact elements attached to the second device, wherein at least one of the first and second contact elements comprise a plurality of solder pads; and
a stiffener attached to the upper surface of the third portion and located between the upper surface of the third portion and the first portion.

26. (currently amended) The module of claim ~~[[22]]~~ 23 wherein the third contact elements comprise a plurality of solder pads.

27. (original) The module of claim 24 wherein the first, second, and third portions include first, second, and third layer having signal traces mapped to the first, second, and third contact elements, respectively.

28. (currently amended) The module of claim ~~[[21]]~~ 25 wherein the first and second devices are identical devices having solder balls attached to the first and second contact elements, respectively.

29. (original) The module of claim 28 wherein the identical devices are memory devices.

30. (currently amended) The module of claim ~~[[21]]~~ 28 wherein the stiffener is made of one of an insulating material, a polyimide film, a mica plate, a polyester film, and a polyaramid paper.